

5/17/17 1. A method of moving an object on a drag plane in a virtual three-dimensional (3D) space, comprising:

selecting the object using a cursor;
moving the cursor to a location;
5 creating a reference plane;
projecting movement of the cursor from the location to an interim point on the reference plane;
projecting the interim point onto the drag plane; and
displaying the object on the drag plane.

10 2. The method of claim 1, wherein projecting the interim point comprises rotating the reference plane onto the drag plane.

15 3. The method of claim 1, further comprising:
calculating a first angle between a line of sight and the drag plane, wherein the line of site is a line from a virtual camera to the object; and

20 determining a drag angle by using a larger angle of the first angle and a predetermined minimum angle.

4. The method of claim 3, wherein the reference plane is created using the drag angle.

5. The method of claim 3, wherein the drag angle is measured from the line of sight to the reference plane.

5 6. The method of claim 3, wherein the predetermined minimum angle is 30 degrees.

7. The method of claim 1, further comprising:
hiding the cursor from a user's view;
10 wherein the object is displayed while the cursor is hidden.

8. The method of claim 7, further comprising:
deselecting the object; and
15 displaying the cursor following deselecting.

9. The method of claim 8, further comprising:
moving the cursor to the location of the object, wherein
the cursor is displayed at the location of the object.

20 10. The method of claim 1, wherein a virtual camera moves to keep the object in a user's view.

11. An apparatus for moving an object on a drag plane in a virtual three-dimensional (3D) space, comprising:

a memory that stores executable instructions; and

a processor that executes the instructions to:

5 select the object using a cursor;

move the cursor to a location;

create a reference plane;

project movement of the cursor from the location to an interim point on the reference plane;

10 project the interim point onto the drag plane; and

display the object on the drag plane.

12. The apparatus of claim 11, wherein the processor executes instructions to rotate the reference plane onto the
15 drag plane.

13. The apparatus of claim 12, wherein the processor executes instructions to:

20 calculate a first angle between a line of sight and the drag plane, wherein the line of site is a line from a virtual camera to the object; and

determine a drag angle by using a larger angle of the first angle and a predetermined minimum angle.

14. The apparatus of claim 13, wherein the reference plane is created using the drag angle.

5 15. The apparatus of claim 13, wherein the drag angle is measured from the line of sight to the modified drag plane.

16. The apparatus of claim 13, wherein the predetermined minimum angle is 30 degrees.

10 17. The apparatus of claim 11, wherein the processor executes instructions to:

hide the cursor from a user's view;

15 wherein the object is displayed while the cursor is hidden.

18. The apparatus of claim 17, wherein the processor executes instructions to:

deselect the object; and

20 display the cursor following deselecting.

19. The apparatus of claim 18, wherein the processor executes instructions to:

move the cursor to the location of the object, wherein the cursor is displayed at the location of the object.

20. The apparatus of claim 11, wherein a virtual camera moves to keep the object in a user's view.

21. An article comprising a machine-readable medium that stores executable instructions for moving an object on a drag plane in a virtual three-dimensional (3D) space, the instructions causing a machine to:

select the object using a cursor;

move the cursor to a location;

create a reference plane;

project movement of the cursor from the location to an interim point on the reference plane;

project the interim point onto the drag plane; and

display the object on the drag plane.

22. The article of claim 21, wherein projecting the interim point comprises rotating the reference plane onto the drag plane.

23. The article of claim 21, further comprising instructions that cause the machine to:

calculate a first angle between a line of sight and the drag plane, wherein the line of site is a line from a virtual camera to the object; and

determine a drag angle by using a larger angle of the first angle and a predetermined minimum angle.

24. The article of claim 23, wherein the reference plane is created using the drag angle.

25. The article of claim 23, wherein the drag angle is measured from the line of sight to the modified drag plane.

26. The article of claim 23, wherein the predetermined minimum angle is 30 degrees.

27. The article of claim 21, further comprising instructions that cause the machine to:

hide the cursor from a user's view;

wherein the object is displayed while the cursor is hidden.

28. The article of claim 27, further comprising instructions that cause the machine to:

deselect the object; and
display the cursor following; deselecting.

29. The article of claim 28, further comprising
5 instructions that cause the machine to move the cursor to the
location of the object, wherein the cursor is displayed at the
location of the object.

30. The article of claim 21, wherein a virtual camera
10 moves to keep the object in a user's view.

108290" 24096860